



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,925	11/28/2001	Mark Gagner	2001P22392US	1140
7590	07/06/2005		EXAMINER	
Siemens Corporation Intellectual Property Department 186 Wood Avenue South Iselin, NJ 08830			CHOW, CHIH CHING	
			ART UNIT	PAPER NUMBER
			2192	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/995,925	GAGNER, MARK	
	Examiner Chih-Ching Chow	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 29 April 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 November 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/12/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

1. This action is responsive to amendment dated April 29, 2005.
2. Per Applicant's request, claims 1, 9, and 17 have been amended.
3. Claims 1-18 remain pending.

***Response to Amendment***

4. Applicants' amendment filed on 04/29/2005, responding to the 02/04/2005 Office action provided in the 35 USC § 101 rejections for claims 1, 9, and 17. The examiner has reviewed the amended claims 1, 9, and 17 respectfully.
5. The rejection to the 35 USC § 101 rejections is hereby withdrawn in view of Applicants' amended claims 1, 9, and 17.
6. Applicants' amendment for Claims 1, 9, and 17 have been fully considered respectfully by the examiner but they are not persuasive. Claim objections are added due to the amendments, please see below.

***Response to Arguments***

7. Applicants' arguments for Claims 1-13, 15-18 have been fully considered respectfully by the examiner but they are not persuasive.
8. Applicant's arguments are basically in the following points:
  - Newman does not disclose only executing blocks in a block program that receives a new input value which is different from a previous input value (see REMARKS/ARGUMENTS page 7, item 3)

Examiner's Response: In response to applicant's argument, the Examiner disagrees with the applicant's argument, see Newman's Claim 1 (a), "generating a list of any said input for each of such blocks"; and (c), "processing in the computing machine such input and feed-through lists for the one of the block diagrams for ordering of such procedures and comprising the step of determining the occurrence of a predetermined relation between any said input in the feed-through list and in the input list for one of such blocks in the one block diagram and, **the step of selectively**, depending on the

occurrence of the predetermined relation, **ordering one of an update state procedure** that corresponds to the same block in the order relative to the other **update state and update output procedures so that a representation of the input for such update state procedure will have been defined** by one of said update output procedures previous in the order" – Newman's disclosure selectively define the input list base on update state to the block program, which implies that new input value (that will cause update state) to the block program.

- Cameron Fails to cure the Deficiencies of Newman (see REMARKS/ARGUMENTS page 8, item 4)

Examiner's Response: In response to applicant's argument, Cameron does not need to cure the deficiencies of Newman, since Newman's disclosure implies the feature that is recited in Claim 1, 9 and 17.

9. Examiner is maintaining the 35 USC § 102 and the 35 USC § 103 Rejections. For the Applicants' convenience they are listed as following, with the amendments requested by the Applicants.

#### *Claim Objections*

10. Claim 1 is objected to because of the following informalities: Claim 1 preamble, "An controller for executing a block ", the 'An' should be 'A'. Appropriate correction is required.

11. Claim 9 is objected to because of the following informalities: Claim 9, last line, "to control said least one device", should be "to control said at least one device"; the 'at' should be added.

#### *Claim Rejections - 35 USC § 102*

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5, 313,615 by William Newman et al. (hereinafter "Newman").

### CLAIM

1. An controller for executing a block program to control at least one device in a network comprising:
  - a. a block table listing a plurality of records corresponding to a plurality of blocks in the block program provided in said controller;
  - b. a block library provided in said controller for holding a plurality of algorithms associated with said blocks;
  - c. means for executing said blocks in said block program in accordance with said associated algorithms; and
  - c. wherein said executing means selectively executes said blocks in the block program that receives a new input value which is different from a previous input value to control said at least one device in said network.

### Newman

See Newman's abstract, "each block corresponds to a **software procedure** for performing at least one function (*each of the executing function is considered as an algorithm*) and has **at least one input** or **at least one output**." Also see Newman's figures 3A and 3C, Newman teaches using table listing for blocks in block diagram (*block program*). Further more, see Newman column 3, lines 7-11, "For any time, say T.<sub>sub.1</sub> (time), the state at T.<sub>sub.1</sub> (that is the state variables) and the input waveforms determine **uniquely the state** at any time T>T.<sub>sub.1</sub>" also see Newman claim 1, item (a) "generating a list of any said input for each of such blocks" and (c), "processing in the computing machine such input and feed-through lists for the one of the block diagrams for ordering of such procedures and comprising the step of determining the occurrence of a predetermined relation between any said input in the feed-through list and in the input list for one of such blocks in the one block diagram and, the step of selectively, depending on the occurrence of the predetermined relation, ordering one of an update state procedure that corresponds to the same block in the order relative to the other update state and update output procedures so that a representation of the **input for such update state** procedure will have been defined by one of said update output procedures previous in the order." (*a new input value which is different from a previous input value*) and "the state at any

2. The apparatus as defined in claim 1 further including an execution image file for storing descriptions of said blocks and connections between said blocks.

time T and the inputs at any time T determine uniquely the output value at time T of the block".

For the feature of claim 1 see claim 1 rejection. The execution image file of current application is defined as claim 13 "**execution image file** storing said records for said blocks and said connectors." See Newman column 2, lines 28-32, "The netlist is a computer-readable form of the block diagram, **containing all the required information** about the block diagram, such as how the blocks are connected together, the software procedure call the block represents, parameter lists (*descriptions of said blocks and connections between said blocks*), etc", AND Newman column 18, lines 21-23, "The block function type is a computer-language **description of the type of function** (coefficient, "unit" delay, etc.) represented by the block."

3. The apparatus as defined in claim 1 further including means for inputting/outputting data to and from said executing means.

For the feature of claim 1 see claim 1 rejection. Also see Fig. 3A for Inputs and Outputs data.

4. The apparatus as defined in claim 1 wherein each of said records in said block table includes a field indicating whether a corresponding one of said blocks is to be executed by said executing means.

For the feature of claim 1 see claim 1 rejection. See Newman's claim 9, "The method of claim 7 wherein the step of processing comprises the step of generating a **sequence list indicative of the order (flag list)** in which such procedures are to be executed."

5. The apparatus as defined in claim 4 wherein each of said records in said block table further includes, a field for indicating the type of function performed by said corresponding one of said blocks, and a field for identifying said corresponding one of said blocks.

For the feature of claim 4 see claim 4 rejection. In Newman's FIG. 3A, 3B and 3C, they list fields for indicating the type of function performed (function name) by said corresponding one of said blocks.

Art Unit: 2192

6. The apparatus as defined in claim 5 wherein each of said records in said block table further includes,

- at least one field for identifying at least one output connector connected to said corresponding one of said blocks,
- at least one field for identifying at least one input connector connected to said corresponding one of said blocks,
- at least one field for storing an input value of said corresponding one of said blocks, and
- an output value field for storing an output value of said corresponding one of said blocks.

For the feature of claim 5 see claim 5 rejection. See Newman's FIG. 3A, it specifies 'output connector' (4<sup>th</sup> column) and 'input connector' (3<sup>rd</sup> column), and FIG. 3C, it specifies the 'input value' and 'output value' for each of said blocks.

7. The apparatus as defined in claim 1 further including a connector table listing a plurality of records of a plurality of connectors for operatively connecting said blocks.

For the feature of claim 1 see claim 1 rejection. See Newman column 1, lines 54-56, "The system configurator allows a user to specify the **topology** of the proposed system in terms of **interconnected functional blocks**". And column 2, lines 10-13, "The library contains information about each block, including its submodules, connections, documentation and high-level program code (*connector table listing*), all of which can be made available to the designer through on-line windows."

8. The apparatus as defined in claim 7 wherein each of said records in said connector table includes a field identifying one of said blocks to which a corresponding connector is connected at a first end, and at least one field for identifying at least one of said blocks to which said corresponding connector is connected at a first end, and at least one second end.

For the feature of claim 7 see claim 7 rejection. For the rest of claim 8 feature see figure 3A-C, and claim 1 rejection.

9. A computer-implemented method for executing a block program for controlling at least one device in a network using a

For items a and b, same as claim 1 rejection; for items c and d see claim 4 rejection and Newman column 28, lines

controller, comprising the steps of:

- a. creating a block table of plurality of block records in the controller that correspond to a plurality of blocks used in the block program;
- b. creating a library in the controller for holding a plurality of algorithms for executing functions associated with said blocks;
- c. selectively setting a flag in said block records when at least one input value of corresponding said blocks changes; and
- d. executing said algorithms of said blocks in said block program having corresponding block records that have said flag set to control said least one device in said network.

10. The method as defined in claim 9 further including the step of creating a connector table of records that correspond to connectors for operatively connecting said blocks.

11. The method as defined in claim 10 further including the step of subsequently setting a flag in said records corresponding to said blocks that are connected to at least one output of said blocks that have been executed, if a value of said at least one output of said executed blocks has changed.

48-51, "Each row of the figure represents a change in the status of either the blocklist pointer, blocklist or sequence list."

For the feature of claim 9 see claim 9 rejection. For the rest of the claim 10 feature see claim 1 and 2 rejections.

For the feature of claim 10 see claim 10 rejection. For the rest of the claim 11 feature see claim 4 and 9 rejections, and Newman column 71, lines 50-53, "During block 994, a variable called 'OUTPUT UPDATED' (*an identification of a connector*) is set equal to the last output on the OLF list. The purpose of this variable is to **flag the last output on the OLF list that has been updated.**"

Art Unit: 2192

12. The method as defined in claim 11 wherein said step of subsequently setting said flag includes the steps of obtaining an identification of a connector corresponding to said at least one output of said executed blocks from said block records corresponding to said executed blocks, and obtaining an identification of blocks that are connected to said connector.

For the feature of claim 11 see claim 11 rejection. For the rest of the claim 12 feature see claim 4, 9, and 11 rejections.

13. The method as defined in claim 10, wherein said block table and said connector tables are created from an execution image file storing said records for said blocks and said connectors.

For the feature of claim 10 see claim 10 rejection. For the rest of claim 13 feature see claim 2 rejection.

15. The method as defined in claim 9 wherein said records in said block table are listed in an order corresponding to a predetermined order in which said blocks are adapted to be executed in said block program.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 15 feature see claim 4 rejection.

16. The method as defined in claim 15 wherein said executing step includes a step of checking each record in said block table in said listed order for said block records having said flag set.

Same as claim 15 rejection.

17. A controller having a block program for controlling at least one device in a control network, comprising:

- a. a block table, provided in said controller, listing a plurality of records corresponding to a plurality of function blocks in the block program, said blocks each having at least one input for receiving an input value and at least one output for outputting an output value;
- b. a connector table listing records of connectors for operatively connecting said blocks;
- c. a block library for holding algorithms associated with said blocks; and,

Same as claim 1; in order for Newman's disclosure to work, the block program must contain at least one device in a control network, since it is meant to work for a simulator system.

- d. means for executing said blocks in said block program in accordance with said associated algorithms;
  - e. wherein said executing means selectively executes said blocks in the block program that receives a new input value which is different from a previous input value, wherein at least one device in a control network is controlled in response to said executing means selectively executing a block.
18. The controller as defined in claim 17 further including means for inputting data to said executing means from the devices and the control network, and outputting data to the devices and the control network from said executing means.

For the feature of claim 17 see claim 17 rejection. For the rest of the claim 18 feature see claim 1 rejection.

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,313,615 by William Newman et al. (hereinafter "Newman"), in view of U.S. Patent No. 5,325,526 by Donald Cameron et al. (hereinafter "Cameron").

#### **CLAIM**

14. The method as defined in claim 9 wherein said executing step is performed at every predetermined time interval.

#### **Newman / Cameron**

For the feature of claim 9 see claim 9 rejection. Newman teaches all aspects of claim 14, but he does not mention 'executing step is performed at every predetermined time interval' specifically, however, Cameron teaches it in an analogous prior art. In Cameron column 5,

lines 64-67, "In a typical implementation of this single processor architecture, each task, T1, T2, and T3, is given a **predetermined time slice** ('activation quantum') during which a single task is allowed to execute".

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Newman's disclosure of the block program control by the executing programs in predefined time taught by Cameron, for the purpose of monitoring the execution times for each of the tasks (see Cameron column 6, line 1).

### ***Conclusion***

16. The following summarizes the status of the claims:

35 USC § 102 rejection: Claims 1-13, 15-18

35 USC § 103 rejection: Claim 14

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:30am - 4:00pm.

Art Unit: 2192

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature of relating to the status of this application should be directed to the **TC2100 Group receptionist: 571-272-2100**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow

Examiner

Art Unit 2192

June 27, 2005

CC



ANTONY NGUYEN-BA  
PRIMARY EXAMINER